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A Review of the Capabilities and Recent Projects of the Economic Analysis Division

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1. INTRODUCTION

THE PURPOSE OF THIS PRESENTATION IS TO DESCRIBE THE CAPABILITIES AND WORK OF THE ECONOMIC ANALYSIS DIVISION.

COST AND ECONOMIC IMPACT ANALYSIS

COORDINATION OF ECONOMIC ASSISTANCE

SPECIAL PROJECTS

1. THE PRIMARY FUNCTION OF THE ECONOMIC ANALYSIS DIVISION IS TO DETERMINE THE ECONOMIC CONSEQUENCES OF VARIOUS POLLUTION CONTROL EFFORTS.

BY QUANTIFYING THE CONSEQUENCES, ALTERNATIVE COURSES OF ACTION CAN BE EVALUATED.

(1) THE COSTS OF CONTROLLING POLLUTION MUST BE DETERMINED FIRST TO PROVIDE A BASIS FOR SUBSEQUENT ECONOMIC ANALYSES.

INVESTMENT - THE CAPITAL EXPENDITURES REQUIRED TO INSTALL THE DESIGNATED TREATMENT CONFIGURATIONS.

ANNUAL COSTS

- CAPITAL COST
- DEPRECIATION
- OPERATION AND MAINTENANCE

WHERE PRACTICAL, INVESTMENT AND ANNUAL COSTS SHOULD BE EXPRESSED AS A FUNCTION OF VARIOUS LEVELS OF POLLUTION CONTROL SO THAT THE COST/EFFECTIVENESS RELATIONSHIP CAN BE DETERMINED.

(2) SUBSEQUENT ECONOMIC ANALYSES ARE CONDUCTED TO DETERMINE THE IMPACT OF POLLUTION CONTROL COSTS IN TERMS OF:

SALES

PRICES

PROFITS

BALANCE OF TRADE

PLANT CLOSINGS

EMPLOYMENT LOSSES

COMMUNITY IMPACTS

2. A SERIES OF ECONOMIC STUDIES HAVE BEEN COMPLETED TO ASSESS THE IMPACT OF POLLUTION CONTROL ON THE GENERAL ECONOMY AND FOURTEEN SELECTED KEY INDUSTRIES MOST LIKELY TO BE SEVERELY AFFECTED.

AUTOMOBILES	ALUMINUM
BAKING	COPPER
CEMENT	LEAD
ELECTRIC UTILITIES	ZINC
FRUIT AND VEGETABLE CANNING AND FREEZING	PETROLEUM REFINERIES
LEATHER TANNING	PULP AND PAPER MILLS
IRON FOUNDRIES	STEEL MAKING

(1) THE MACROECONOMIC STUDY INDICATED THAT THE NATIONAL ECONOMY WILL NOT BE SEVERELY IMPACTED. HOWEVER, THE IMPACT IS NOT INSIGNIFICANT.

CONSTANT DOLLAR GNP GROWTH AVERAGES 0.3% LOWER OVER THE 1972-76 INTERVAL AS A RESULT OF HIGHER PRICES FOR CONSUMER AND CAPITAL GOODS.

UNEMPLOYMENT RATE IS SLIGHTLY HIGHER (0.1 - 0.2% ABOVE BASELINE OF 4.6%) WITH EMPLOYMENT DECLINES NEARLY OFFSET BY NEW JOBS CREATED BY POLLUTION CONTROL INVESTMENTS.

NET EXPORTS OF GOODS AND SERVICES DECLINE ($1 BILLION PER YEAR OVER THE 1972-76 PERIOD) AS A RESULT OF INCREASING DOMESTIC PRICES.

(2) THE MICROECONOMIC STUDIES INDICATED THAT NONE OF THE INDUSTRIES STUDIES WOULD BE SEVERELY IMPACTED.

HOWEVER, PROFITS WILL DECLINE FOR SOME FIRMS IN MOST OF THE INDUSTRIES BECAUSE THE COSTS OF POLLUTION ABATEMENT WILL NOT BE ABLE TO BE PASSED ON TO CONSUMERS IN THE FORM OF HIGHER PRICES.

MOST OF THE FIRMS THAT WILL BE FORCED TO CLOSE ARE CURRENTLY MARGINAL OPERATIONS.

- APPROXIMATELY 12,000 PLANTS CURRENTLY OPERATING IN THE INDUSTRIES STUDIED.
- APPROXIMATELY 800 WOULD CLOSE IN THE NORMAL COURSE OF BUSINESS BETWEEN 1972 AND 1976.
- IT WOULD APPEAR THAT AN ADDITIONAL 200 TO 300 PLANTS WILL BE FORCED TO CLOSE BECAUSE OF POLLUTION ABATEMENT REQUIREMENTS.

THE DIRECT JOB LOSS ATTRIBUTABLE TO ENVIRONMENTAL REGULATIONS MAY RANGE FROM 50,000 TO 125,000 OVER THE 1972 - 1976 PERIOD.

- REPRESENTS 1% TO 4% OF TOTAL EMPLOYMENT IN THE INDUSTRIES STUDIED.
- REPRESENTS 0.05% OF THE 1970 TOTAL NATIONAL WORKFORCE.

3. STUDIES WERE CONDUCTED TO ASSESS THE ECONOMIC IMPACT OF THE STATE AIR IMPLEMENTATION PLANS (SIP) ON AN AGGREGATE BASIS.

(1) THE METHODOLOGY IN THE SIP ANALYSES INCLUDED THE FOLLOWING STEPS:

DETERMINATION ON A STATE-BY-STATE BASIS WHETHER THE STANDARDS PROPOSED IN THE SIP's DIFFERED FROM FEDERAL GUIDELINE STANDARDS.

ESTIMATION OF THE COSTS ASSOCIATED WITH THE PROPOSED STATE STANDARDS WHEN THEY DIFFERED FROM THE FEDERAL GUIDELINE STANDARDS.

ASSESSMENT OF THE DIFFERENTIAL ECONOMIC IMPACT OF THESE COSTS RELATIVE TO THE BASE CASE ECONOMIC ANALYSES.

(2) IN GENERAL, THE FINDINGS OF THE ANALYSES ARE THAT THE ECONOMIC IMPACT OF THE SIP's WILL BE ABOUT THE SAME OR SLIGHTLY LESS SEVERE THAN THE IMPACTS INDICATED BY PREVIOUS ECONOMIC STUDIES.

THE SIP ANALYSES INDICATE THAT THE MACROECONOMIC IMPACT WILL BE ABOUT THE SAME AS PREVIOUSLY ASSESSED BECAUSE THE COST ESTIMATES FOR THE PREVIOUS STUDIES ARE CONSISTENT WITH THE COSTS ASSOCIATED WITH THE SIP's. IN FACT, THE SIP COSTS ARE ESTIMATED TO BE SLIGHTLY LOWER.

THE MICROECONOMIC SIP ANALYSES INDICATE THAT NONE OF THE INDUSTRIES STUDIED WOULD BE SEVERELY IMPACTED IN THAT LONG-RUN VIABILITY OF NO INDUSTRY IS SEVERELY THREATENED SOLELY BY THE POLLUTION ABATEMENT COSTS ESTIMATED.

AN ATTEMPT WAS MADE TO PROVIDE QUANTITATIVE ESTIMATES OF REGIONAL DIFFERENCES IN UNEMPLOYMENT, GROWTH, PROFITS, ETC. UNFORTUNATELY, WE DO NOT YET HAVE ENOUGH CONFIDENCE IN THESE MODELS TO RELY ON THEIR QUANTITATIVE PREDICTION.

4. ASSESSMENT OF THE ECONOMIC IMPACT OF THE PROPOSED EFFLUENT GUIDANCE FOR TWENTY INDUSTRIES.

(1) THE COSTS OF CONFORMING WITH THE PROPOSED RAPP GUIDANCE HAVE BEEN ANALYZED FIRST AS A BASIS FOR THE SUBSEQUENT ECONOMIC ANALYSES. THE FOLLOWING ELEMENTS OF COST WERE INCLUDED IN THE ANALYSES:

INVESTMENT - THE CAPITAL EXPENDITURES REQUIRED TO INSTALL THE DESIGNATED TREATMENT CONFIGURATIONS.

ANNUAL COSTS

- CAPITAL COST (8%)

- DEPRECIATION (5%)

- OPERATION AND MAINTENANCE

ATTEMPTS WERE MADE TO EXPRESS COSTS AS A FUNCTION OF VARIOUS LEVELS OF POLLUTION CONTROL.

(2) FOR CERTAIN INDUSTRIES, IT IS RECOMMENDED THAT GUIDANCE BE APPLIED ONLY TO THE LARGER PLANTS IN CERTAIN PRODUCT SEGMENTS:

PETROLEUM	ELECTROPLATING
PULP AND PAPER	FERTILIZERS
DAIRIES	CANE SUGAR REFINING
MEAT PROCESSING	FRUITS AND VEGETABLES CANNING AND FREEZING
COAL MINING	

(3) FOR OTHER INDUSTRIES, FRAGMENTED DATA WILL NECESSITATE APPLICATION OF THE GUIDANCE ON AN INDIVIDUAL CASE BASIS:

MINING AND MILLING	MOTOR VEHICLES
RAW CANE SUGAR MILLING	

(4) FOR TECHNICAL REASONS, APPLICATION OF GUIDANCE IS BEING DELAYED FOR THE FOLLOWING INDUSTRIES:

TEXTILES	INORGANIC CHEMICALS
SYNTHETIC POLYMERS	ALUMINUM
LEATHER TANNING	

5. COMPREHENSIVE MICROECONOMIC STUDIES OF THIRTEEN ADDITIONAL INDUSTRIES ARE IN THE FINAL STAGES OF COMPLETION.

FIBER GLASS

COAL MINING

METAL MINING

DAIRIES

MOTOR VEHICLES

BEVERAGES

SYNTHETIC POLYMERS

MEAT PRODUCTS

CANE SUGAR

BEET SUGAR

TEXTILES

INORGANIC CHEMICALS

FERTILIZERS

III PLANT CLOSINGS

1. ACTUAL PLANT CLOSINGS HAVE BEEN IN LINE WITH THE INDICATIONS FROM THE MICROECONOMIC STUDIES.

   THE CHARTS THAT FOLLOW SUMMARIZE THREATENED AND ACTUAL PLANT CLOSINGS WHERE POLLUTION CONTROL COSTS WERE ALLEGED TO BE A FACTOR.

CUMULATIVE ECONOMIC DISLOCATION REPORT
JANUARY 1971 THROUGH SEPTEMBER 1972

DISLOCATION	PLANTS	TOTAL EMPLOYMENT	JOBS LOST	TEMPORARY LOSS AND TRANSFERS	JOBS LOST IN RELATED FIRMS
ACTUAL:					
CLOSINGS	29	7,778	7,013	0	0
CURTAILMENTS	16	9,944	1,396	822	100
THREATENED:					
CLOSINGS	46	14,706	UP TO	UNKNOWN	0
CURTAILMENTS	20	9,837	14,706	75	0

ECONOMIC DISLOCATIONS BY INDUSTRIES
JANUARY 1971 THROUGH SEPTEMBER 1972

INDUSTRY	PLANTS AFFECTED ACTUAL	THREATENED
PULP AND PAPER	10	21
NON FERROUS METALS	6	5
FOOD PROCESSING	5	4
CHEMICALS	4	16
IRON AND STEEL	4	2
TEXTILES	3	4
LUMBER	3	0
IRON FOUNDRIES	2	0
MISCELLANEOUS INDUSTRIES*	8	14
TOTAL	45	66

*INDIVIDUAL INDUSTRIES HAVING ONLY ONE PLANT AFFECTED.

ECONOMIC DISLOCATIONS BY REGION
JANUARY 1971 THROUGH SEPTEMBER 1972

STANDARD FEDERAL REGION	PLANTS AFFECTED ACTUAL	THREATENED
I	3	5
II	17	7
III	3	7
IV	0	10
V	1	16
VI	7	3
VII	0	0
VIII	0	1
IX	6	13
X	8	4
TOTAL	45	66

ECONOMIC DISLOCATIONS BY POLLUTANT
JANUARY 1971 THROUGH SEPTEMBER 1972

	PLANTS AFFECTED	
	ACTUAL	THREATENED
AIR	25	21
WATER	17	40
BOTH	3	5
TOTAL	45	66

ECONOMIC DISLOCATION BY TYPE OF ENFORCEMENT
JANUARY 1971 THROUGH SEPTEMBER 1972

ENFORCEMENT ACTION	PLANTS AFFECTED ACTUAL	THREATENED
STATE	26	29
FEDERAL	8	15
FEDERAL AND STATE	3	16
LOCAL	5	4
NO ACTION FILED	3	1
CIVIL	0	1
TOTAL	45	66

IV ECONOMIC ASSISTANCE

1. IT IS IMPORTANT TO HAVE WIDESPREAD KNOWLEDGE OF FEDERAL ECONOMIC ASSISTANCE AVAILABLE TO ALLEVIATE ECONOMIC DISLOCATIONS RESULTING FROM POLLUTION CONTROL ACTIONS.

   * PLANT CLOSINGS CAN BE EXPECTED TO ACCELERATE AS WE MOVE FURTHER INTO THE 1972 - 1976 PERIOD.

   * EARLY STAGES OF ENFORCEMENT OFFER THE MAXIMUM OPPORTUNITY FOR ASSISTANCE.

   * EPA REGIONAL PERSONNEL ARE IN A POSITION TO OFFER COUNSEL TO FIRMS THAT MAY EXPERIENCE ECONOMIC DISLOCATIONS AND TO INITIATE FEDERAL ASSISTANCE EFFORTS.

   * THE POTENTIAL FOR FEDERAL ASSISTANCE SHOULD BE CONSIDERED IN ALL CASES WHERE ECONOMIC DISLOCATIONS MAY RESULT.

2. BUSINESSES AFFECTED BY POLLUTION CONTROL REQUIREMENTS CAN BE DIVIDED INTO THREE GROUPS.

(1) THE VAST MAJORITY OF FIRMS REQUIRE NO ASSISTANCE TO COMPLY AND REMAIN VIABLE OPERATIONS.

* SUFFICIENTLY PROFITABLE TO OBTAIN CAPITAL TO FINANCE REQUIRED POLLUTION CONTROLS.

* TAX EXEMPT INDUSTRIAL DEVELOPMENT BONDS PROVIDING FROM 1.5 TO 2.0 PERCENTAGE POINTS SAVINGS IN INTEREST RATES ARE BEING USED IN SOME SIZEABLE SITUATIONS - U.S. STEEL, $30 MILLION

* ACCELERATED DEPRECIATION (FIVE YEAR WRITE OFF) OF POLLUTION CONTROL EQUIPMENT IS PERMITTED BY THE IRS CODE.

* INVESTMENT TAX CREDIT IS ELECTED MORE FREQUENTLY THAN ACCELERATED DEPRECIATION.

* GRANTS TO ASSIST IN FINANCING MUNICIPAL TREATMENT FACILITIES.

(2) A SMALL PORTION OF FIRMS HAVE NO LONGRUN VIABILITY AND THESE WILL PERISH EVEN IN THE ABSENCE OF POLLUTION CONTROL REQUIREMENTS.

* POLLUTION CONTROL COSTS WILL ACCELERATE THE DEMISE OF THIS GROUP.

* GRANTS TO DELAY CLOSINGS OF THESE FIRMS WOULD REPRESENT INEFFICIENT UTILIZATION OF RESOURCES.

* REEMPLOYMENT PROGRAMS, UNEMPLOYMENT COMPENSATION AND COMMUNITY DEVELOPMENT ASSISTANCE PROGRAMS ARE AVAILABLE FOR THESE SITUATIONS.

(3) MARGINALLY VIABLE FIRMS CAN BE ASSISTED BY EXISTING FEDERAL PROGRAMS.

* SOME FIRMS ARE NOT SUFFICIENTLY PROFITABLE TO ATTRACT CONVENTIONAL FINANCING BUT COULD REMAIN VIABLE WITH LOW COST LONG TERM LOANS.

* EDA AND SBA BUSINESS LOAN PROGRAMS OFFER ASSISTANCE WHERE:

  - THERE IS A REASONABLE PROBABILITY OF REPAYMENT.

  - FINANCING FROM PRIVATE SOURCES IS NOT AVAILABLE.

2. INITIAL ECONOMIC ASSISTANCE EFFORTS OF EPA HAVE FOLLOWED A POLICY OF UTILIZING EXISTING INSTITUTIONS AND PROGRAMS.

(1) AN INTERAGENCY AGREEMENT WAS ESTABLISHED A YEAR AGO WITH THE DEPARTMENT OF LABOR TO EXPEDITE EMPLOYMENT ASSISTANCE TO AREAS AFFECTED BY POLLUTION CONTROL ENFORCEMENT.

* PROVIDES EARLY NOTIFICATION TO DOL OF ENFORCEMENTS THAT COULD AFFECT EMPLOYMENT.

* FACILITATES PROMPT APPLICATION OF EMPLOYMENT SERVICES AND JOB DEVELOPMENT PROGRAMS TO AVOID OR MINIMIZE UNEMPLOYMENT.

* CONVENTIONAL FEDERAL/STATE UNEMPLOYMENT BENEFITS ARE AVAILABLE IN THE SAME AMOUNTS AS THE BENEFITS ACCRUING FOR OTHER FORMS OF UNEMPLOYMENT

(2) AN INTERAGENCY AGREEMENT HAS BEEN FINALIZED WITH THE SMALL BUSINESS ADMINISTRATION TO MAKE LOANS AVAILABLE TO SMALL FIRMS FOR POLLUTION CONTROL EQUIPMENT.

* SBA AGREES TO MAKE LAONS AVAILABLE TO QUALIFIED FIRMS UNDER THEIR CONVENTIONAL BUSINESS LOANS PROGRAM.

  - $350,000 MAXIMUM

  - LIMITED TO A MAXIMUM OF 15 YEARS

* THE RECENT WATER BILL AMENDED THE SBA ACT TO PROVIDE LOANS FOR WATER POLLUTION CONTROL EQUIPMENT UNDER THE DISASTER LOANS PROGRAM

  - LOANS UP TO 30 YEARS

(3) AN INTERAGENCY AGREEMENT PROVIDING FOR BUSINESS LOANS FROM EDA IS EXPECTED TO BE APPROVED IN MARCH.

* THIS AGREEMFNT COULD FOSTER THE AVAILABILITY OF LOANS UNDER THE BUSINESS LOANS PROGRAM.

* TWO LEGISLATIVE ALTERNATIVES FOR EXTENDING EDA ARE UNDERWAY.

(4) A PLAN TO INVOLVE THE FEDERAL REGIONAL COUNCILS IN THE INITIATION AND COORDINATION OF COMMUNITY ECONOMIC ASSISTANCE PROJECTS HAS BEEN APPROVED BY THE UNDER SECRETARIES GROUP FOR REGIONAL ADMINISTRATION. THIS PLAN PROVIDES A MECHANISM WITHIN THE FEDERAL REGIONAL COUNCILS TO:

* EXPEDITE FEDERAL ASSISTANCE TO AFFECTED COMMUNITIES

* INITIATE OR FACILITATE REDEVELOPMENT PLANNING

* SIGNIFICANTLY INCREASE THE AVAILABLE FEDERAL REDEVELOPMENT FUNDING BY CONSOLIDATING THE GRANT MAKING AUTHORITIES OF THE MEMBER AGENCIES

* EXPEDITE COMMUNITY ECONOMIC RECOVERY BY COORDINATING THE EFFORTS OF MEMBER AGENCIES IN PROVIDING THE NECESSARY INFRASTRUCTURE FOR INDUSTRIAL DEVELOPMENT

* THE MAJOR ON-GOING RESPONSIBILITIES FOR FOCUSING THE COUNCILS' ATTENTIONS ON ENVIRONMENTALLY RELATED DISLOCATION WOULD FALL UPON THE EPA REGIONAL ADMINISTRATORS

V SPECIAL PROJECTS

IN ADDITION TO ECONOMIC ANALYSIS AND ECONOMIC ASSISTANCE EFFORTS, THE ECONOMIC ANALYSIS DIVISION IS SIGNIFICANTLY INVOLVED IN OTHER MAJOR AGENCY PROJECTS:

- AUTOMOBILE INDUSTRY HEARINGS
- TECHNOLOGY ASSESSMENT FOR STACK GAS CLEANING
- ENERGY POLICY PLANNING
- LOS ANGELES TRANSPORTATION CONTROL PLANS